

DETAILED ACTION

Drawings

1. Figures 28 and 29 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.
2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ronald Noland on January 14th, 2008.

Please amend the claims to read:

5. (Currently Amended) A friction stir welding method for supporting a stacked assembly made up of a plurality of members with a placement jig which has a recess defined in an upper end face thereof, and embedding a probe of a friction stir welding tool into an upper end face of said stacked assembly to friction-stir-weld said stacked assembly, comprising the step of:

displacing rotating and embedding said probe into said upper end face of said stacked assembly toward said recess of said placement jig so as to displace said placement jig in a direction to bring the center of said recess into alignment with the center of said probe when said probe is rotated and embedded into the upper end face of said stacked assembly toward said recess of said placement jig to friction-stir-weld said stacked assembly over said recess.

6. (Currently Amended) A friction stir welding jig for friction-stir-welding a stacked assembly made up of a plurality of members, comprising:

a probe of a friction stir welding tool to friction-stir-weld said stacked assembly from an upper end face thereof;

a placement jig having a recess defined in an upper end face thereof, for placing said stacked assembly thereon; and,

a support jig displaceably supporting said placement jig in a direction to bring the center of said recess into alignment with the center of said probe when said probe is rotated and embedded into the upper end face of said stacked assembly toward said recess of said placement jig to friction-stir-weld said stacked assembly over said recess.

3. The following is an examiner's statement of reasons for allowance:

Although the prior art, such as De Koning (US Patent No. 6,360,937) teaches a method of friction stir welding strips (3 and 4, stacked assembly made of a plurality of members) with aluminum supports (18 and 19) and a sole plate (2, which make up a "placement jig") which has a recess (11, defined in an upper end face thereof) by embedding a mandrel (10, probe) of a friction stir welding tool (9) into the upper end face of said stacked assembly to friction stir weld the assembly. The aluminum supports are fixed on the bed (1, support jig) such that the center of the recess is in alignment with the mandrel. The mandrel is then rotated and embedded into the upper face of the stacked assembly toward said recess in the jig in order to friction stir weld the stacked assembly over the recess.

De Koning however fails to teach rotating and embedding said probe into the upper end face of said stacked assembly toward said recess of the placement jig so as to displace said placement jig in a direction to bring the center of said recess into alignment with the center of said probe because the probe of De Koning must be aligned with the center of the recess prior to the friction stir welding. The apparatus of independent claim 6 is also found to be allowable with the addition of the function limitation requiring the support jig to be displaceably supporting said placement jig in a direction to bring the center of said recess into alignment with the center of said probe when said probe is rotated and embedded into the upper end face of the stacked assembly toward said recess of

said placement jig to friction-stir-weld said stacked assembly over said recess.

The apparatus of De Koning is not capable of such displacement in response to the friction-stir welding tool (probe) being embedded into the stacked assembly and the assembly must be aligned prior to welding.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas P. D'Aniello whose telephone number is (571)270-3635. The examiner can normally be reached on Monday through Thursday from 8am to 5pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sam Chuan Yao can be reached on (571) 272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 4111

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NPD
1/14/08

/Sam Chuan C. Yao/
Supervisory Patent Examiner, Art Unit 4111